

Claims

1. An assembly for removing chips from a cutting tool working area on a workpiece, comprising: a support structure (2; 16; 54, 58, 60) for supporting a first end of an axially expandable and collapsible tubular member (6; 46; 90); a cross-piece (8; 34; 82) for supporting a second end of the tubular member (2; 46; 90); at least one biasing spring (6; 30, 32; 46; 72, 74; 90) configured and arranged for resiliently biasing the support structure (2; 16; 58) and the cross-piece (8; 34; 82) away from one another; a housing (4; 36; 62) with a chips-receiving chamber (5; 38) located adjacent one of said ends of the tubular member (6; 46; 90) for engagement with the working area of the workpiece, an outlet (C; 40, 44) from the chamber (5; 38) of the housing being configured to be connected to a vacuum source for removing chips from the chamber; and a hub portion (7; 22; 84) located at the other of said ends of the tubular member for engagement with a cutting machine.
2. The assembly according to claim 1, wherein the biasing spring itself constitutes the axial expandable and collapsible tubular member (6) and is configured as a telescopic resilient spring made of a helically wound strip.
3. The assembly according to claim 1, wherein the support structure (2; 54, 58, 60) is carrying the housing (4; 62) with the chips-receiving chamber (5) and is arranged to be fixated close to the working area of the workpiece, whereas the cross-piece (8; 82) is carrying the hub portion (7; 84) for a biased engagement with the cutting machine.
4. The assembly according to claim 1, wherein the cross-piece (34) is carrying the housing (36) with the chips-receiving chamber (38) for a biased engagement with the working area of the workpiece, whereas the support structure (16) is configured to be mounted to an axially movable, non-rotating component (12) of the cutting machine (14) and is carrying the hub portion (22) adjacent a spindle of the cutting machine.

5. The assembly according to claim 3, wherein the at least one biasing spring comprises a pneumatic telescopic cylinder unit (72, 74) attached at one end thereof to the support structure (58) and at the other end to the cross-piece (82).
6. The assembly according to claim 5, wherein one telescopic cylinder unit (72, 74) is arranged on each side of the tubular member (90).
7. The assembly according to claim 4, wherein guide members (26, 28) are attached to the support structure (16) and the cross-piece (34) in order to facilitate a mutual linear displacement of the support structure (16) and the cross-piece (34).
8. The assembly according to claim 7, wherein the support structure (16) comprises a U- shaped bracket having side legs (18) interconnected by the hub portion (22) and provided with a section (20) for fixation of the support structure (16) to a non-rotating component (12) of the cutting machine.
9. The assembly according to claim 8, wherein the cross-piece (34) comprises a yoke member with the housing (36) located centrally on the yoke, said guide members including guide rods (28) attached to opposite end sections of the yoke, and guide blocks (26) attached to the support structure (16) for interaction with the guide rods (28).
10. The assembly according to any one of claims 7-9, wherein the at least one biasing spring comprises a pneumatic telescopic cylinder unit (30, 32) attached at one end thereof to the support structure (16) and at the other end to the cross-piece (22).
11. The assembly according to claim 10, wherein one telescopic cylinder unit (30, 32) is arranged on each side of the tubular member (46).